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POSTER PRESENTATION

C224 Morpho-functional imaging of the honeybee olfactory system by in-vivo two-photon microscopy

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We report on a novel application of in-vivo two-photon microscopy to investigate the honey bee olfactory system, focusing on its primary centres, the antennal lobes. Our imaging system allowed obtaining both 3D-tomographic measurements of the antennal lobe morphology without the need of extracting the brain and time-resolved in-vivo calcium recording of its neuronal activity.
Morphological data were used to measure the glomerular volume in both sides of the brain, in search of a possible volumetric lateralization. Functional calcium imaging allowed to record characteristic glomerular response maps to external odour stimuli. Final goal of this study is the extension of the existing functional atlases of the antennal lobe, up to now limited to surface glomeruli and their average response strength, to the whole 3D volume and into the temporal dimension by investigating the time-resolved activity pattern.

Session Details

Session Title:	11. Sensory systems (Other perception systems)
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